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Edited by WILLIAM HUNTING, F.R.C.V.S.

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ANTHRAX.

This week we complete the publication of an abstract of a paper by Professor Delépine—a paper very interesting to veterinarians because it treats of the disease in animals. We also commence the reprint of a paper on anthrax in man, by Dr. T. M. Legge, which forms a most valuable supplement to the other. If there were no anthrax in animals there would be none in man, for the human disease is always traceable to infection from a dead animal or some of its products, such as wool, hair, or hide. The number of human beings affected with anthrax directly from our home stock is few, but seems to be on the increase. The number infected by imported material reaches nearly 100 a year.

The loss of human life from rabies never reached anything approaching the loss from anthrax, and yet our Government enforced stringent regulations to stamp out rabies whilst little is done to control anthrax. The cessation of rabies, due to scientific and logical measures, was accompanied by the disappearance of hydrophobia. Such a success is instructive and encouraging. Of course the two diseases are not quite comparable. Muzzling dogs did not interfere with trade, and a long quarantine of imported dogs had no effect upon British industries. Restrictions upon the movement of animals causes loss to the owners; and obstruction to to the importation of wool, horse-hair, bristles, hides, etc, would very seriously interfere with large industries.

The loss of human life calls for more attention than has been given to this subject, and the increase of the disease among animals in our own country suggests that wider and more effective control is necessary.

Professor Delépine believes that the greatest cause of the increase of anthrax among animals is the treatment of dead bodies which are not notified. These are opened, blood escapes, and the ground is infected. No doubt this does happen, and it is not easy to see how it can be prevented, except by educating the stockowner. Prof. Delépine suggests that the concealment or overlooking of cases of anthrax might be met by *compulsory notice of all cases of deaths from acute illness* on farms, and that notification should be accompanied by a small fee to the owner. This certainly would prevent the concealment of many cases, but the law now requires that notification should be made to the police, and it would not do to trust these men with the diagnosis. We fear too that the owner would object to such a stringent rule unless he was paid compensation for each carcase that proved not to be infected with anthrax, for nearly all carcases of cattle are of some value.

It seems to us that with a constant importation of anthrax into this country it is hardly fair to penalise the native stock-owner whilst allowing perfect liberty to the importer. Prof. Axe once made inquiries which convinced him that there was a distinct relationship between the prevalence of anthrax among home stock and the proximity of factories using imported wool, hair, and hides. Prof. Delépine does not agree with this, and his facts are, we confess, strong. Even if a good case for action is not yet made out, a very strong case exists for such systematic enquiry as might be undertaken by a Departmental Committee of the Board of Agriculture.

HÆMATURIA IN A BULL FOLLOWING RUPTURE OF RENAL VESSELS.

Egyptian bull admitted to Institute May 5th, 1904, and thence regularly employed for obtaining rinderpest serum. For this purpose he had already been bled eleven times, four litres of blood being taken from the jugular vein on each occasion.

Symptoms.—On March 13th, 1905, discovered passing blood in the urine, which rapidly coagulated.

Diagnosis.—Hæmaturia following renal hæmorrhage.

The animal appeared in good health, and save for some slight stiffness of gait, showing no discomfort or marked anæmia, no treatment was adopted beyond relegation to sick lines and rest. This was difficult to maintain, as the bull being of a particularly nervous temperament resented the slightest interference, leading one to imagine that the lesion sustained might be due to self inflicted mechanical injury. Hæmaturia ceased on the 15th inst, and he was thought to have recovered. On the 17th inst. the symptoms recurred to a slight extent, the bull passing more blood but in smaller quantities. It was thought advisable, as the beast was rapidly losing condition, to bleed him to death for serum. This was accordingly done.

Post-mortem examination revealed that severe internal hæmorrhage had taken place. The whole of the fat surrounding the right kidney being deeply blood stained. Bladder distended and completely filled with blood clot, the mucous membrane showing no congestion, whereas that lining the prepuce was markedly congested.

On removal the kidney showed the capsule entirely separated from the gland by blood clot two inches in thickness and moulded on the lobulations. On section several small hæmorrhages were present in the medulla, the cortex being quite free. Dissection of the renal vessels attempted with difficulty owing to the amount of clot surrounding them, but no definite rupture could be described.

The psoæ muscles of the same side appeared dark, blood stained, and soft, as if some bruising had taken place.

The case seems of interest owing to the well marked symptoms leading to diagnosis confirmed post-mortem, and also to the fact observed that repeated bleeding, such as practised for purposes of obtaining sera, may induce aneurism following fatty degeneration, reducing the cohesion of the vessel walls, when a very slight trauma may determine their rupture.

H. A. REID.

Serum Institute, Cairo.

ABSTRACTS FROM FOREIGN JOURNALS.

THE EMPLOYMENT OF ANTI-ANTHRAX SERUM IN VETERINARY PRACTICE.—By Dr. CARINI, Chief of the Vaccinal Service, Bacteriological Institute, Berne.

The conclusive laboratory experiments and good results obtained from the sero-therapeutic treatment of anthrax in man persuaded the author of the real value of anti-anthrax serum, and led him to undertake the preparation of it himself. An ass was immunised against anthrax by injecting small quantities of attenuated anthrax bacilli (Pasteurean vaccine) and afterwards using gradually increasing quantities of virulent cultures. The injections were made into the vein in a careful manner so as to prevent abscess formation, which would be not without danger as they would contain anthrax bacilli. The ass supports intravenous injections of considerable quantities of anthrax microbes very well. In spite of the rapid and almost sudden course of infection in animals the author believes that one could obtain, in certain cases, good results. The serum would also be useful to combat the too violent reactions set up by the Pasteurean vaccines.

In a model dairy containing 35 to 40 cows, four cases were encountered in August, September, and November, and so long as the remainder were kept in the shed there were no more deaths; but in April, after they were sent out to graze, three more cases occurred. Owners have the common habit of bleeding their cattle as soon as they observe them to be ill, and thus the floor of the shed or soil in the pastures are infected. On April 29th Dr. Carini was called in, two cows having died within five days. It was necessary to obtain a rapid immunisation by injecting all the cows with a little anti-anthrax serum and afterwards inoculate them as soon as possible with the Pasteurean vaccines; but this latter only producing immunity one or two weeks after the vaccination, the employment of the author's serum which has an immediate action was indicated. As the serum has only a temporary action it was necessary to vaccinate the animals at the same time as injecting the serum, which has again the action of diminishing the swelling produced by the vaccine. Although the facts are not numerous they have convinced the author of the efficacy of the method which he recommends, and concludes in the following manner:—

1. Anti-anthrax sero-therapy may be used in practice, and should be suitable treatment in every case taken at the commencement; it must be used in large and repeated doses (150—200 c.c. in all.)

2. Ten cubic centimetres of the serum are not sufficient to ensure immunity in cows against anthrax, it would be necessary to choose 20 c.c. at least as an immunising dose.

3. As soon as anthrax is noticed in a shed, the temperature of all the cows should be taken at least twice every day until immunisation of the whole of the herd has been obtained. The surest means of obtaining it is to make a provisional passive immunisation with 20 c.c. of the serum to be followed by a definite or active immunisation by means of the Pasteurean vaccines.— (*Schweizer, Archiv für Tierheilkunde*, Dec., 1904, ex. *Bulletin Vétérinaire*, Feb. 15th, 1905).

THE VALUE OF THE VARIOUS MOLLASINED FOODS IN PLACE OF OATS FOR TROOP HORSES.

Herr Jarmatz after trying eight varieties of these treacled foods, including the highly recommended peat moss, concludes that they cannot be substituted for oats and have not much value as a diet for troop horses. If of any value at all they should be given in lieu of hay but not of oats. On the other hand they seem of utility during the moulting season as they raise the condition and appetite of the horse and shorten the duration of moulting.—(*Zeitschrift für Thierhilkunde für Veterinär der Arm.)*

[It may be asked, Are they of any more value than simple treacle mixed with the ordinary rations? If not of any value, treacle would be much cheaper and more wholesome than treacled peat moss.—*Translator*].

H. G.

THE CAUSES OF THE INCREASE OF ANTHRAX IN GREAT BRITAIN.

(Abstract of Paper by SHERIDAN DELEPINE, M.B.Edin., M.Sc. Vict., Professor of Comparative Pathology, and Bacteriological Director of the Public Health Laboratory Manchester University).

(*Concluded from p. 607.*)

When diseased animals are slaughtered at farms or private slaughterhouses, or dead animals are sold by farmers to butchers, these precautions are seldom, if ever, taken. The animal is often bled and skinned in the field or stable, the offal, and sometimes the whole carcase, when unsaleable, are buried carelessly, or thrown upon a midden, contaminating manure, which may afterwards be used in the neighbourhood. Part of the offal may be used to feed swine, causing the death of some, and a further source of infection. The blood may be used to manure fields. Or else the farmer may sell the carcase to the small knacker man, who buys it for its hide, buries what he does not want, or allows it to rot in order to obtain the bones, which he sells to manure manufacturers. Whilst the infected *débris* lies about, rats, mice, and other vermin have access to it. Rats, though not very liable to anthrax, may possibly disseminate the disease through their excreta. Mice are certainly liable, for after two, three, four, or five days, a certain proportion of the mice I have fed on the organs of animals dead of anthrax or on food contaminated with spores, have died from the disease. The spots where infected mice die may therefore become infected also. Experiments upon the liability of various kinds of mice and other vermin are needed before a proper estimate of their share in the dissemination of anthrax can be arrived at.

Of all the facts referred to in this paper, those relating to the thoughtless or illicit disposal of carcases by farmers, butchers, and knackers, seem to me to explain best the course which anthrax has taken in various districts after once the disease had been introduced, and these mischievous practices can only be carried out where cases of anthrax are accidentally overlooked or wilfully concealed.

These are the only facts which explain why the disease has clung to certain localities, without remaining confined to a very limited number of farms, for they show how the disease can be spread from farm to farm.

It might be thought that I am exaggerating the share taken by overlooked or concealed cases of the disease, but there is ample evidence that such cases are not rare, and, although only a small proportion of these are likely to be referred to me, several have come under my personal observation during the last few years.

It is important to remember that between the moment when an animal has partaken of infected food, and thus become infected, and the time when the symptoms indicate that it has become ill, there is a period during which there is no external sign by which the farmer or the veterinary surgeon can tell that the animal is infected. This period of infection without symptoms (incubation period) may be of importance in connection with the dissemination of the disease, for an animal may, during that period, be transferred from one farm to another without the farmer suspecting the animal to be suffering from the disease. I am not acquainted with any observations or experiments showing whether the excreta are infectious or not during that stage. The extreme limit of the duration of the incubation period of anthrax has not been well determined in the case of all domesticated animals, but experiments made on sheep and various experimental animals prove that it is very variable.

Sheep fed on clover contaminated with anthrax spores may live for eight or ten days after that meal. (All the sheep submitted to such an experiment do not die, unless the quantity of spores is considerable. When the quantity of spores is moderate, as many as half of the sheep may escape infection). So that an infected sheep may carry in its body the germs of anthrax for about a week or more without showing any evidence of the disease. Animals under observation in the laboratory may remain apparently well after subcutaneous inoculation or feeding with virulent material, till a few hours before death. I have made over 100 observations upon this point, and have always found that the period during which symptoms are manifest is always very much shorter than the period of incubation.

Thus a mouse dying twenty or twenty-four hours after inoculation, seldom shows any symptoms such as would attract attention under ordinary circumstances, till the 16th or 20th hour after inoculation.

A mouse dying in 48 hours	may appear well for over	40	hours	after inoculation.
" " 72 "	60 to 66	"	"	
" " 96 "	80 to 90	"	"	

The same thing is noticeable in mice fed upon food infected with anthrax bacilli with or without spores, only death occurs usually after a period of from 50 to 120 hours. Results of the same kind were obtained in the case of guinea-pigs and rabbits, only guinea-pigs seldom die in less than thirty hours, and generally live for two or three days after subcutaneous inoculation. Rabbits usually live three or four days after inoculation.

Irregularities are observed when the virulence of the products investigated has been modified by keeping under various conditions. When virulent cultures and young animals are used, the results are much more uniform, and it is then found that mice seldom survive more than one day, guinea-pigs two days, and rabbits three days.

I have observed an exceptional case of chronic anthrax in a guinea-pig, which I had inoculated with spores nearly two years old. The animal did not seem affected in the least for three weeks, but at the end of that time it was found dead in its cage, and on post-mortem examination I found a fair number of active virulent anthrax bacilli in the spleen.

From the facts previously recorded, it is obvious that with our present methods of diagnosis it is not often possible to discover in a herd those animals which are affected with anthrax long before their death, and that it is not usually possible to obtain veterinary advice before that event. It is also clear that of several animals infected at the same time, some may die several days, and, possibly, one or two weeks after the others.

An important source of error in diagnosis is the fatality of anthrax in the case of pregnant cows. When a cow is in calf and becomes affected with anthrax, abortion may take place before the death of the cow. The cow appears, therefore, to die from the effects of abortion, and anthrax may remain unsuspected. Two cases have come under my notice in the course of last year, in which this combination had occurred. The farmers were under the impression that these cows had died of parturient fever following abortion. It was only the examination of the internal organs by a Veterinary Inspector that led to the suspicion of anthrax, and on bacteriological examination I found in both cases that anthrax bacilli were present in the blood and various organs, which had also all the usual characters associated with anthrax.

I have had lately another instance of a combination of circumstances making diagnosis difficult. Several cows were inoculated with tuberculin, and some of them died. The death was supposed at first to have been due to the tuberculin injection, but as it was found on examination after death that the animals had contracted anthrax, it was thought that the tuberculin was contaminated, and contained anthrax bacilli or spores. I examined one part of the fluid and found it free from anthrax bacilli or spores. The same results were obtained in two other laboratories, one in England, and one in France. The syringe used had been sterilised between the injections by the veterinary surgeon. It must therefore be assumed that the animals that died were already affected with anthrax at the time of the injection, or contracted the disease about the same time. These cases were observed in a district where other cases of anthrax had occurred.

When the organs of an animal dead of anthrax are examined soon after death, the appearances presented by the blood, the spleen, lymphatic ganglia and muscles are generally characteristic enough in typical cases of anthrax. It must be, however, remembered: (1) That in a few cases lesions are not typical; (2) That the symptoms may suggest some other cause of death, as in those cases of abortion and of suspected poisoning which I have previously mentioned; (3) That when there is a suspicion of anthrax it is contrary to the directions of the Board of Agriculture to make a post-mortem examination.

Post-mortem microscopical diagnosis although the most satisfactory, is not always so easy to carry out as is generally believed. Immediately after the death of an animal affected with anthrax, the blood is found on microscopical examination to be full of bacilli, which are quite easily seen with an ordinary microscope, and which, when suitably treated and sufficiently magnified, have characters which leave little doubt as to their nature. This method of diagnosis is, however, reliable only in the hands of a good microscopist having at his disposal a good microscope.

When an animal has been dead some time, and decomposition has begun, the bacilli begin to undergo degenerative changes, and are associated with other forms of bacteria; even a bacteriologist of experience may then find some difficulty in making an accurate diagnosis. I have occasionally met with difficulties of this kind. Well known bacteriologists such as Nocard, Carl Fränkel, and others, have also insisted upon the

danger of relying entirely upon microscopical examinations in such cases as I have mentioned. When the bacteriological examination has been postponed too long, it may be impossible to find the bacillus anthracis.

Inoculation of susceptible animals, such as mice and guinea-pigs, is absolutely reliable in recent or uncomplicated cases, but when the anthrax bacillus is associated with some other bacteria, the inoculated animals occasionally recover. The separation of the bacillus by cultivation methods is probably the most reliable method of diagnosis, but it is also difficult in certain cases.

The microscopical and bacteriological methods of diagnosis, although generally simple enough, become complicated and difficult in a certain proportion of cases, so that some of the cases belonging to the second category are liable to be overlooked when simple tests are entirely relied upon. The difficulty increases rapidly with the length of time which has elapsed after the death of the animal.

Therefore, although there are few diseases in which it is possible to obtain more accurate post-mortem diagnosis than in the case of anthrax, *it is impossible to rely entirely upon negative results*, unless each case is thoroughly investigated by the best methods available.

Conclusions.

The chief cause of spread of infection in a locality seems to me to be the concealment or overlooking of cases of anthrax. The remedy against this appears to be a more complete system of notification. One of the defects of the present system of notification is, that it is often based entirely upon the opinion of the farmer. The nature of many fatal cases is not obvious, and the farmer cannot be expected to recognise always the nature of cases, which experts may find it difficult to diagnose. There seems only one way to overcome this difficulty, and that is to enforce the *notification of all cases of deaths from acute illness*, or any other cases which cannot be clearly accounted for by ordinary accidents; cases of illness which render *slaughter at the farm* necessary, should also be notified. The present method of notification as applied to anthrax seems to be very simple, and might easily be rendered more efficient. I will therefore in the first instance indicate how the present system might, in my opinion, be improved.

To ensure rapid notification the farmers or veterinary surgeons notifying cases should be entitled to some small *notification fee*, in addition to which the farmer should have the prospect of obtaining some compensation for the losses which measures of a precautionary type may involve. Slaughter not being necessary for preventive purposes there should be no question of compensation in that respect. It is not easy to suggest how under the present arrangements the funds necessary for the purpose of protecting farmers against losses from disease and death could be found by county authorities without the introduction of a system of insurance.

On the other hand, farmers or veterinary surgeons neglecting to notify cases, should be liable to a penalty which should be severe in cases of wilful concealment.

The Veterinary Inspector, recognised by the Authority for the purpose, should give to the owner or farmer a certificate of death, stating clearly whether the carcase (described in the certificate) can be sold for certain stated purposes, or must be destroyed under supervision.

All carcases of animals dead of anthrax should be disposed of according to the methods recommended by the Board of Agriculture until some equally efficient and more economical method is recognised by the Board. Burning appears to be, at present, the safest method, when carried out properly, but it is very expensive.

The slaughter of animals or disposal of carcases in places not licensed for the purpose (and therefore not subject to frequent inspection), should be entirely forbidden. A butcher, knacker, or manufacturer, should not be permitted to buy a carcase without seeing the certificate of death. The carcase should not be used for any other purpose than that indicated on the certificate. Any neglect of these precautions should entail a penalty.

The veterinary surgeon having completed his inspection of the farm and carcase should, without delay, send his report to the proper Authority.

The occurrence of anthrax on a farm may be indicated by a farmer, butcher, knacker, or other contracting the disease. It is possible also that some of the cases of anthrax occurring at work where animal products are dealt with may be due to home products. (They are usually attributed to imported raw material). It is therefore desirable that the County Authority should be made acquainted, without delay, with any case of human anthrax occurring in any district receiving farm products, live animals, or carcases from any part of the county. For the same reason the Authority should be made acquainted, without delay, with the detection of anthrax carcases at any abattoir. This is done, I believe, at present, in a certain number of cases, but I think that it might be done more systematically and that Sanitary, Factory, and Market Authorities should be clearly indicated the course they have to follow when such cases occur.

I believe that investigations carried out in this way would cause a diminution in the number of overlooked and concealed cases, and allow the actual source of infection to be discovered in many cases. The data obtained would gradually improve our knowledge of the disease and permit of the more effective application of preventive measures.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

The forty-third annual meeting was held at the Grand Hotel, Manchester, on March 3rd, the President, W. Packman, Esq., in the chair, and the attendance included about 40 members and friends. Amongst the visitors were Prof. Williams, Prof. Boyce, Prof. Delépine, Dr. Niven, Mr. Hunting, Mr. Clarkson, Capt. Mason, Capt. Ridler, A.S.C.

Apologies for absence were received from Messrs. A. Lawson, C. E. Challinor, A. H. Darwell, Lloyd Jones, R. Hughes, J. McKinna, J. Adamson.

On the motion of Mr. S. Locke, seconded by Mr. Taylor, the minutes of the last annual meeting were taken as read.

A letter was read from Lady FitzWygram thanking the members of the Lancashire V.M.A. for their expressions of sympathy.

The announcement was made of the death of Col. Lambert who recently resigned his membership of the Association owing to ill-health.

Mr. Faulkner said that the profession had lost in Col. Lambert a member whom they always looked to with respect and he moved that a letter of condolence be sent to the remaining members of the family. On Mr. Hopkins seconding this all the members present marked their approval by rising.

New Members.

The following gentlemen were unanimously elected members of the Association:—

Messrs. W. S. Worthington, Wigan (proposed by Mr. Woods, seconded by Mr. G. H. Locke); Mr. J. T. Share-Jones, Liverpool (Mr. S. Locke, Mr. Faulkner); H. L. Roberts, Board of Agriculture (Mr. G. H. Locke, Mr. Packman); Arnold Richardson, Liverpool (Mr. G. H. Locke, Mr. Sumner); J. Adamson, Bolton (Mr. G. H. Locke, Mr. Faulkner); Aldred, Chester (Mr. G. H. Locke, Mr. Hopkin).

A letter was read from Dr. Niven enclosing tickets for members who desired to hear Prof. Delépine's paper on "The causes of the increased prevalence of Anthrax in Great Britain."

Also letters from the Secretaries of the Yorkshire, the Lincolnshire, and the Eastern Counties V.M.A. in reference to the forthcoming election of Council.

Mr. FAULKNER pointed out that the new Association formed in Liverpool might desire to co-operate with the Lancashire and other Societies. It might be desirable, therefore, before coming to a definite conclusion to have further information on the subject. He now moved that the Lancashire V.M.A. combine for election purpurposes with the Yorkshire, Eastern Counties, and the Liverpool Associations if they so desired. Mr. Wolstenholme seconded this, and the proposal was approved.

Mr. PACKMAN said he had pleasure in proposing that Mr. Carter be again asked to offer himself as candidate for the Council of the Royal College of Veterinary Surgeons. Mr. Carter had given his services, and they had been of the very best and useful character, and in his opinion they could not do better than support him again.

Mr. S. LOCKE seconded, and it was carried.

Mr. CARTER in response desired to assure them that he esteemed it a great honour to be asked to again stand as their candidate. If any other gentleman, however, cared to seek election he would willingly withdraw, as he did not wish to usurp the position. He had been a member of Council for eight years and would be very pleased to again accept office, if elected.

Mr. FAULKNER wished to say that those who had had the honour of serving on the Council of the Royal College of Veterinary Surgeons would know that there was a considerable amount of work to be done, and he believed that in recent years this had increased very considerably. He had much pleasure in proposing that the best thanks of the Association be given to Mr. Carter for his services in the past. The work is done gratuitously, the only reward being the feeling of having discharged one's duties for the welfare of their profession.

Mr. TAYLOR seconded, and wished to endorse the sentiments conveyed by Mr. Faulkner.

A letter was read from the Royal Institute of Public Health, London, respecting the Congress of that Institute to be held in London on July 19th to the 25th inclusive. This matter was left over to the next meeting.

A STANDING COMMITEEE.

Mr. G. H. LOCKE then proposed "That a Council or Standing Committee be elected annually, to deal with any business requiring prompt attention." It had been found difficult in the past to deal with matters that required prompt attention. He proposed that the Council or Standing Committee should consist of the officers and six members of the Association, five members to form a quornm. The Yorkshi e V.A. had adopted this course and found it to work satisfactorily. He submitted the names of six members for election :—Messrs. W. A. Taylor, Hopkin, Faulkner, S. Locke, Woods, Sumner.

Mr. CARTER seconded the proposal and the appointment of the above named gentlemen. This was approved.

In reference to the powers of the Committee Mr. Clarkson said that the Yorkshire Society had left matters very largely in the hands of Committee and it had given great satisfaction. It was certainly helpful to the Secretary.

PROPOSED DONATION TO VICTORIA UNIVERSITY.

Mr. TAYLOR desired to give notice of motion that at the next meeting he intended to move "That a donation from the funds of this Association be contributed to the Victoria University of Manchester in aid of the equipment of the Public Health Laboratories."

PROPOSED PARLIAMENTARY COMMITTEEE.

Mr. H. L. ROBERTS also gave notice of motion of the following resolution : "It is the opinion of the members of the Lancashire V.M.A. that the time has arrived for the consideration of a scheme, the object of which is the return of a veterinary surgeon to the House of Commons." He also gave notice of motion of the following proposition : "That a Committee of the L.V.M A. be appointed to collect Parliamentary intelligence which might be considered beneficial or otherwise to the best interests of the veterinary profession; the committee to report the particulars of their information at each quarterly meeting of the Association."

PRESIDENTIAL ADDRESS.

Mr. WALTER PACKMAN, M.R.C.V.S., Bury.

Gentlemen,—It is now my privilege to thank you most sincerely for again electing me to fill this chair for the coming year. It is not my intention to inflict upon you another long inaugural address, and I hope you will in your kindness pardon me for not doing so.

I must, however, express to you my appreciation of the kindness and forbearance you have at all times shown me during the past year, and I feel I should be wanting indeed were I not to express my warmest thanks not only for your courtesy and goodwill, but for the trouble and inconvenience you have from time to time undergone in order that you might give me your much-needed and ever valued support. Without this kindness I should not have ventured to have undertaken a second year in this presidential chair.

More than ever I feel at the present time such societies as these are necessary to the progress and wellbeing of our profession. Looking back upon the past year, I cannot say that our outlook has been a particularly happy one. We are undoubtedly undergoing a change, and few of us, I venture to say, can look back upon the past twelve months and feel that he has had a very successful year financially. Not only has it been a remarkably healthy year among our patients, but the increase of electrical and mechanical traction, and the reduction in the amount of stock in the country have contributed to the reduction of our incomes. It is to be sincerely hoped that the pendulum will soon swing again in the opposite direction, but it is diffieult to see in what direction any fresh sources of revenue can at the present time be opened up. I turn with pleasure to a subject of a more cheerful character, and I allude to the interesting epoch in the history of the veterinary profession, namely, the opening of the veterinary school in connection with the University of Liverpool. Personally, I feel strongly this is a step in the right direction, and I hope sincerely that it will go on and prosper. It is not my intention to touch upon its educational advantages, or of the little frictions that have existed. I hope they are all now brushed aside, for in the great temple of knowledge no contentions of place should exist, but a spirit of fraternity prevail.

While on the question of veterinary education, I desire to express the hope that a closer co-operation with the medical profession will exist, especially on matters appertaining to public health, and that those gentlemen whose intention it is to take out the post-graduate courses will find a field of work open to them in the shape of remunerative civil appointments sufficient to kindle the energies of others to pursue this branch of veterinary science.

Our position in the Army now should induce the newly-qualified man to enter. The alteration of our status in this branch of the Service has been brought about after a hard fight, and here I think we might gratefully acknowledge the services rendered by Professor Williams, and other members of the Council of

the Royal College of Veterinary Surgeons, in bringing about this much needed reform.

Our profession, I consider, has made marked progress during the past few years. Indeed, I know of no other that has made the same advancement, and I think we may congratulate ourselves from an educational and social standpoint, for a brighter future.

There is one further remark before I sit down. I rejoice to think the veterinary profession can claim at least one undoubted advantage over our medical friends, and that advantage is our one portal system of examination. I hope that we shall do all in our power to protect this single inlet into our profession. The multiplicity of diplomas and degrees that are granted by the numerous medical bodies is positively appalling. Our present system is interwoven with the welfare of every member of our profession, and I hope sincerely that anything tending to weaken it will receive the most vigilant opposition at our hands.

Since our last meeting we have, I regret to say, lost one of our much esteemed honorary members. I allude to the death of Major-General Sir Frederick FitzWygram. His zeal and earnestness for everything tending to the welfare of the profession, and the benevolence of his nature will ever be remembered and appreciated by us all.

Last year, gentlemen, I fear I wearied you by the length of my address, now I feel I owe you an apology for its brevity. I may, perhaps, during the year be allowed the opportunity of reading a paper on some subject, and I will then try to strike the happy medium.

Mr. FAULKNER said it was not customary in Manchester to criticise the President's address and he therefore moved that the best thanks of the meeting be given to Mr. Packman for his kindness in addressing them.

After Mr. Taylor had seconded this, Mr. Packman briefly thanked the members.

Mr. FAULKNER remarked that during the last few months he had had brought to his notice in various ways a matter which he thought was worthy of the consideration of the meeting that day. He had mentioned it to the executive of their Association some weeks ago, and it was considered of sufficient interest to be taken up. The President had granted him permission to introduce the subject to the present meeting. It was a subject which he had very much at heart, because it was one that ought and would no doubt appeal very strongly to every well-wisher of their profession. He thought the time had arrived when they should confer honour where honour was due, and he asked that a movement should be set on foot to do some honour to Professor Williams who had so strenuously exerted himself in the advancement of veterinary education. He (Mr. Faulkner) suggested that a committee be constituted on broad lines to go into details and arrange something of a definite character.

Mr. PACKMAN had pleasure in proposing that the snggestions be carried out. He was sure that Professor Williams was well deserving of the honour suggested.

Mr. CARTER seconded, and it was approved.

THE DINNER.

The customary loyal toasts having been duly honoured Mr. Carter proposed "The Imperial Forces." Respecting the Navy there was no doubt, he thought, that we as Englishmen were proud of it. We had the finest Navy in the world, and so long as we kept it equipped in the manner it was at present we had no reason to fear any foreign nation. In regard to the Army it was a well known fact that we had a small standing Army, but they were picked men and ready to do good service if required. As to the Auxiliary Forces it was some 30 years since he was in that noble force. He had great admiration for them for the distinguished work they had done in recent years, and were ready to do again if necessary.

Captain RIDLER, A.S.C., in responding, desired to thank them for the manner in which they had received the toast to the forces. So far as the Navy was concerned he was quite sure they could rely upon Sir John Fisher to keep it in good condition. His methods may startle some people, certainly to strike off 150 ships from the active list did appear startling, but if they would be ineffective in time of war it would save the money necessary to keep them in something like condition. The Army had been subjected to a great deal of criticism, rightly or wrongly, they knew as well as he. One of the results had been to bring about great changes in organisation, and he had no doubt good results would follow. Respecting the volunteers, he considered they were the most important branch of our defence. There were many different ideas as to the best way of making the volunteers efficient, but he would not deal with them at present. He was not in favour of conscription, but he was strongly of opinion that every able-bodied man should be able to bear arms so that if need be a selection could be made and immediately utilised. The connection between the veterinary profession and the Army had undoubtedly been beneficial.

Capt. MASON also briefly responded, saying that Capt. Ridler had practically given a synopsis of a soldier's life, he would therefore thank them tor the gracious way in which the toast had been received.

Mr. BRITTLEBANK proposed the toast of "The Medical Profession." He had been asked to undertake a duty which was a very pleasant and at the same time a rather severe task. In former years they had been accustomed to have this toast proposed in those eloquent and well-rounded phrases which our friends, Messrs. Faulkner and Taylor, were so capable of uttering. It was a startling surprise to him to be asked to follow in their footsteps, and he thought the toast would suffer in comparison. At the same time he thought whilst the committee were deciding on their toast list they must have had before them a newspaper report of a speech made by Prof. Osler, in which he said that a man did his best work before he was forty, and that at sixty he should go in for a year of meditation before he was chloroformed. That idea was an old one, and he (Mr. Brittlebank) thought that the committee must have read that report before giving him the toast to propose. They were evidently affected. But needlessly so as the later reports of the papers showed that the worthy Professor was only joking. The medical profession was a most noble profession and deserving of the goodwill of everyone. They (the veterinary profession) had always been more or less intimately associated with the medical profession and regarded themselves as being a sister profession, a small sister possibly, but still a sister for all that. One profession has helped the other in many ways, and always in the march of progress. Whether it be in the Army, in the walks of life as a general practitioner, or in the field of research and preventive medicine the work of a medical man is one of great responsibility which does not always receive adequate monetary recognition. He believed, however, that in medical work there is a reward higher than monetary consideration, and a medical man could not always look at the £ s. d. side of the question. With this toast he was asked to couple the names of two distinguished men, men whom he need not introduce, he referred to Professor Delépine and Dr. Niven. Prof. Delépine they all knew, honoured, and respected. He is a man of most masterly attainments, his work is known throughout the world, his researches are distinguished by their originality, and he is indefatigable in his work. Only a few weeks ago we had ample evidence at the opening of the new laboratory in York Place of that vigour with which he does carry on his work. The new laboratory might be called a living

and lasting monument to Prof. Delépine's perseverance. He has had for years to carry on his work in premises which were anything but adequately fitted up. He had to contrive in a number of ways to accommodate his students, but now he has premises which will compare favourably with any of a similar character throughout Great Britain. His work in many fields has been distinguished. He need only mention tuberculosis, anthrax, food poisoning, to give an idea of the variety of the work done. Prof. Delépine had also done a great amount of work for the veterinary profession. They had to thank him especially for the establishment of post-graduate courses at the Victoria University, and for many other favours which were too well known and appreciated by the profession to be specifically mentioned.

Dr. Niven was also a distinguished member of the medical profession on the preventive medicine side. As medical officer of health for a city like Manchester his responsibilities were enormous. Dr. Niven was a hard worker, and in saying that he really meant it, for he acted under Dr. Niven. As a principal, Mr. Brittlebank desired to say that no man could wish for a better one.

It gave him the greatest pleasure to ask them to rise and drink the toast of "The Medical Profession" and to couple with it the names of Professor Delépine and Dr. Niven.

Prof. DELÉPINE desired to thank them for the honour conferred in asking him to respond to the toast of the medical profession. He thought the matter would have been very embarrassing if they had not asked Dr. Niven to support him, for he felt that Dr. Niven would help him out of his difficulties. It was certainly a great honour to be asked to respond to such a toast. As a representative of the medical profession he must say he had the highest admiration for that profession and was pleased to hear it spoken so highly of. At the same time he felt that as an individual member of the profession his position had been over-rated, and though he thanked Mr. Brittlebank for his kind sentiments he felt that he must disclaim some of them. It was very pleasant for the medical profession to hear the younger profession express such hearty and cordial good feeling towards it, and it was gratifying to feel that such a good understanding existed between the two professions. In the name of the medical profession he thanked them most heartily.

Dr. NIVEN said he thought they would agree with him that he, too, had been placed in an embarassing position. He thanked them heartily for the extremely kind words which had been uttered, but he would not say with Prof. Delépine that he rejected them, or that he was modest about them. No, he accepted them all, greedily. He thought it was delightful to hear from Mr. Brittlebank, who of course voiced the feelings of the gathering, that they had such a kindly feeling and high opinion of the medical profession. It was quite certain that the two representatives of that profession who were there to respond heartily reciprocated those sentiments. He did not know whether it would not be a good thing if they could exchange patients occasionally. Inasmuch as Mr. Brittlebank had broached their personal relations he felt it to be only right to say what an excellent and pleasant colleague he was to work with. In his special department Manchester had decidedly benefitted by his services. Prof. Delépine had recently pointed out that during the last few years an immense change had taken place in the character of the milk which is supplied in Manchester. The milk has become much cleaner than formerly. That he thought was a very good testimonial to Mr. Brittlebank.

He would also like to bear testimony to the capacities of Mr. Holburn, who was ever ready to assist in any possible way when problems of a difficult nature occurred. He cordially thanked them for the toast.

Prof. BOYCE, in proposing the toast of "The Veterinary Profession," said they had entrusted to his care a very important toast, but nevertheless it was one which he had the greatest possible pleasure in proposing. He considered it one of the greatest honours that could be offered him. He knew they would not expect anything formal because he did not think he was built in a formal kind of way. Let everything he said be absolutely informal and taken in that spirit of *camaraderie* which he knew their profession had been distinguished above all other professions for. He assumed they would take it in that spirit because he saw around him men who stood shoulder to shoulder with himself only a short time ago. What a wonderful sense of comradeship that gives anybody. He really felt he was amongst absolutely solid friends. It was a great thing to know one another and to know you are working on the same lines.

Then again it gave him great pleasure to propose that toast because it gave him the privilege of coupling with it the names of two distinguished gentlemen—Professor Williams and Mr. Hunting. Prof. Williams he had the greatest respect for. He had learned a great deal from Prof. Williams, and he knew their University was learning a great deal and that he felt absolutely at home. His coming to the University of Liverpool was now an accomplished fact and one they should be proud of.

In Mr. Hunting he was face to face with a gentleman whom in the beginning he did not see eye to eye with, yet he knew that either would be the first to admit that there was nothing like success, and that they were prepared to let bygones be bygones. Mr. Hunting is a man who watches over the interests of the veterinary profession, and in that position he (Prof. Boyce) had absolute respect for him.

We all wanted to make progress and we should be ready to take a hint from those who are wiser than ourselves. If we are to succeed, like Germany has succeeded or the United States is now succeeding, there is no profession that we can neglect, we must all, in every calling, proceed as rapidly as we possibly can and along every possible line. Now he could not help feeling that the veterinary profession, like every other profession, has a big future before it. Captain Ridler had alluded to the fact that the naval estimates had been reduced by about three million pounds, and he (Prof. Boyce) thought that a considerable amount of that money might find its way to the Universities. The Universities had been made dispensaries for the paying out of money for educational movements. He had evidence, after a very careful analysis, of knowing perhaps something of the subject that in future money will come through University channels, and the sooner the various professions and callings ally themselves to the Universities the better it would be for the various professions. It is difficult to think of the immense amount of energy spent in this country in getting money to the Universities, how much more difficult it will be to get money for other professions. Therefore it is the duty of all professions to combine in great Universities and get money. Money is at the bottom of everything, and you cannot hope to succeed or progress in the present day without such sinews of war. Brains we can buy, but you must have the money to buy brains with. We must progress now that we have made the first step. What are the lines on which progress can be made? There must be, and there are, a large number of lines along which the veterinary profession can proceed. He could not help feeling that that must be so because every discovery made in medicine at the present time shows how absolutely bound up is the veterinary profession with human medicine. Why, take human anatomy compared with veterinary anatomy. Veterinary anatomy was a much wider field, and so it

was with almost every other line. The scope for advancement in veterinary medicine appeared to him to be, if anything, greater than the scope for advancement in human medicine. Have we not learned from our discoveries in the animal world practically all we know in man? Therefore every modern University, every University in Lancashire or Yorkshire to be without its veterinary section seems to be absurd. He could no more consider a University complete in a working county like Lancashire or Yorkshire without its veterinary side than he could think it complete without its art side or its science side. It is absolutely part of the side of medicine in its broader sense and he hoped to see, and the time will come when it will be part of every University, and quite right too.

He recently took a trip to the West Coast of Africa to see some of the places where their men had been. They (the Liverpool Tropical School) had been sending out for five years a continuous series of men to work on the coast, and for that period, with only an intermission of a few months, they had had workers there. He was struck with the extraordinary fact that they could scarcely ever get the men back owing to enjoying themselves so thoroughly, but after his visit this did not occasion any surprise. It was his privelege to meet and enjoy the friendship of a considerable number of gentlemen in the veterinary profession, and need he say he could not wish to meet a more pleasant body of men. He was much struck by the fact that in the various colonies whereas there is a principal medical officer to each of the colonies we do not find a principal veterinary officer. He had since gone tooth and nail for the appointment of such an officer. Had we veterinary officers in our various colonies he was perfectly sure we could have settled the transport question and brought about changes in the health and acclimatisation of their animals as the medical officers have done for the whites. An immense amount of work could thus be done, and he had reason to believe that our colonial officers were favourably disposed. There is a feeling that from an economic point of view something should be done in reference to veterinary medicine in the Colonies. He had been approached by several persons as to whether facilities could be made for teaching medical men veterinary medicine in our laboratories. But he wanted to go further than that and train veterinary men for our Colonies, for be was sure that would be the best thing, and not for the medical man to have two strings to his bow. Let us have veterinary officers for our Colonies, that would be something accomplished and he thought it could be done.

It gave him great pleasure to see his old comrade in arms, Prof. Delépine. In the old days they had worked shoulder to shoulder, but now fortune had made it that both being busy they did not see one another. They were both working for the some end, and it was to him the greatest possible gratification that whilst a silent supporter and a silent worker is found in Manchester perhaps a more noisy one was found in Liverpool.

They had just been extending in another direction at Liverpool, and that was in the appointment of an entomologist. He looked upon that as important in a University almost as much so as that of comparative pathology. It is required every moment. Medical science has changed to a large extent as veterinary medicine has. A knowledge of biting insects is imperative in the veterinary profession, and he thought they had made a wise step in establishing the post. If we are to compete with Germany and America we must increase our facilities as much as possible, and he thought Manchester had set a great example to other places in establishing a post of comparative pathology.

He had said little of the past traditions of the veterinary profession, and perhaps it would only be considered a process of soft soaping, but he would not let the opportunity slip of saying that he had the greatest possible esteem for their profession. Before sitting down he desired again to thank them most cordially for allowing him to propose the toast of the veterinary profession, and for the privilege of coupling with it the names of two gentlemen from whom he had learned all he knew.

Prof. WILLIAMS, in responding, said that when Prof. Boyce did them the honour of proposing their health he was probably not aware that he was addressing perhaps the most representative body of the veterinary profession that had been gathered together for some time. There were present that night, amongst others, three ex-presidents, three examiners, and three members of the Council. He was sure that the remarks of Prof. Boyce would be spread far and wide throughout their profession. He has been pegging out what he considers to be "the claim" of the veterinary profession. It is a claim that has long been looked at, but the natural modesty of the profession had prevented them from working upon it. The veterinary profession had to thank Prof. Boyce and the medical profession generally for holding out the welcome hand of our Universities. It had been the dream in their profession that they should have equality of teaching with all other professions. Medical men, law men, clergymen, and other kinds of men have all been able to obtain a University education and University qualifications, but the only men who appear to be excluded are veterinary men. Efforts were made for many years in Scotland to get University education for veterinary students, but Scotland seems to be too far north, and it was only when Liverpool heard and thoroughly appreciated that the veterinary profession were in earnest that Liverpool extended a welcoming hand to the profession and said it would do all in its power. Through their efforts we were now able to say that we could be as well educated as any man in any profession.

He would like to remark, simply as a veterinary surgeon, that medical men had asked the veterinary profession to help them very much but had not so far returned that help which they all desired. What he particularly referred to was that medical men were, to use a common expression, "dead nuts" on a tubercular cow because she gives milk which he assumes, and the majority of people believe, conveys the disease to man. But what they, as a profession, would like was that the senior profession should assist them in exterminating tuberculosis from the animal, which they were able to deal with. He did not think it an exaggeration to say that 30 per cent. of the cattle of this country are more or less affected with tuberculosis. If they would assist in rooting out tuberculosis from the cattle the medical profession would no longer be worried with tuberculosis—if derived from milk, and we presume it is. They should, however, get at the root of the matter. Why kill a tubercular cow? If you kill all the tubercular cows you cannot kill man because he is tuberculous. You can prevent him spitting in public, but then he spits privately, which is most unfortunate. He did not think he exaggerated when he said that if the Government were to make a grant of £100,000, and this sum were placed in the hands of men who knew their business, and he thought the only men who could do it were veterinary surgeons, within ten years we should not have a tubercular animal in this country That, to his mind, was the only way to get without that most serious disease.

There was another important subject in which the medical profession could help, and that was to assist in suppressing glanders. There was a large number of cases of glanders in man which are never diagnosed, he was sorry to say, by the medical practitioner, because he has practically no experience of that disease. This shows the great utility of a combination of the medical and veterinary professions. When medical men really

know what glanders is in man they would be able to assist in exterminating glanders in the horse, and when we exterminate glanders in the horse there will be fewer and fewer deaths among mankind. Mr. Hunting, who is an authority on this subject, could no doubt speak about it more fully but certainly not with greater earnestness.

On behalf of the veterinary profession generally he wished to thank Prof. Boyce very heartily. Prof. Boyce had done more than anyone to assist their profession in attaining almost the height of its ambition, and they all trusted he would continue to give his support until they really attained their ambition, when he might be able to look upon the veterinary profession as his permanent monument.

Mr. Hunting also responded to the toast "The Veterinary Profession." He said Prof. Boyce had spoken of the feeling of *camaraderie* which was established by being among friends, with men who had worked with you so well. Now, naturally, the man who has not worked with those friends feels a little bit nervous. However, he thought they should look upon him as being a strong friend, because if it was a good thing to establish such a spirit of comradeship amongst themselves it had certainly been assisted by a little honest opposition.

The subject of the veterinary profession is at present, and for the future one of very considerable interest, but of the past he would only say—and he was reminded of it by the insistence with which Professor Boyce pointed to the need for money—that we have not done half so much as we might have done. Nobody would be more pleased than he to see the various Universities offering facilities for the progress of the veterinary profession. There was a sort of vanity in all men, and some had it stronger than others. He was, however, like the old Roman who would sooner be first in his own little village than second at Rome. There was a pleasure in being independent in any profession. He had been afraid that the conjunction of their profession with a University would end in their being pushed into a secondary position, but he was pleased to hear that Prof. Williams was taking his part in the University Senate on a level with everyone else. So long as the conjunction of the smaller body with a larger one did not end in servitude to the larger body he was perfectly willing to submit to the arrangement. He did not know whether their profession had a very glorious future before it. Motor cars and electric traction were displacing two or three thousand horses annually in all our large towns. He did not wish to be thought too pessimistic, however. It had been pointed out and acknowledged by Professor Delépine and Dr. Niven that members of the veterinary profession were useful and essential in all organisations for the promotion of public health. No doubt the public health interest will increase, and there will be more and better appointments for the veterinary surgeon. Then there is an animal which has become more common every year, he alluded to the dog. The dog would afford the veterinary surgeon a large field of practice in the future. Somehow or other the treatment of dogs suggested quackery. He knew not why, for he ventured to say that the pathological study of the dog was wider than that afforded by the horse. There were a larger number of diseases affecting the dog than the horse or other animals. Take for instance nervous diseases. There were very few nervous diseases amongst animals except in dogs. You have diseases in dogs which you might read up in text books on the human subject.

Then there was another subject that Prof. Boyce mentioned as a new field for work in which perhaps veterinarians might find a remunerative corner—insects.

Mr. Taylor, in proposing the toast "The President," said he felt some difficulty. It was, he believed, a Japanese proverb that it is easier to find a thousand recruits than one General, and he thought the veterinary profession must have been imbued with similar sentiments, for we found that the same General had again been selected as President of their Society for the ensuing year. He need hardly ask them to believe that Mr. Packman was worthy of the position to which he had been called a second time, for he would not have been re-elected if his services had not been acceptable and highly prized by the members of that Association. He could claim the acquaintance and friendship of Mr. Packman for a period of close upon a quarter of a century and had never known him do a mean act. Anything appertaining to his profession he was always willing and eager to support whether it be internal or external. That leads one to think of the amount of interest he has taken in connection with the union of their profession with University education both in Liverpool and Manchester. Liverpool has been placed in a more favourable position, unfortunately, than Manchester. Rich men have rallied in Liverpool, and have dispensed funds in aid of University education to a much larger extent than have rich men in the neighbourhood of Manchester. Years ago to his own knowledge Professor Delépine and others were willing to take up the subject of veterinary education, but at that time the profession felt too nervous to aspire to the honour which was then tendered.

He read the other day that in a city "down under" the police found a ragged urchin, and in putting the customary questions to him were informed that he had a brother in the "varsity." The officers looked upon him with a certain amount of disbelief, judging from his unkempt appearance, and asked in what department of the University is your brother? His prompt reply was "in the Medical School." The officer then asked, What is your brother doing there? The reply was, "My brother ain't doing nothing, he's in a bottle." Well, he (Mr. Taylor) thought their relations with the Universities were now past the bottle stage, and had got into that condition which might be termed the incubation stage. He hoped the result of the incubation would be the hatching out of better equipped veterinarians in the future, and that their profession might render services to mankind which it was, no doubt, originally designed to bring about. He now asked them to drink the health of their popular President, Mr. Packman.

The President said he hardly knew how to reply. It was a difficult task to respond to the toast of your health. He desired to thank Mr. Taylor for the very kind words he had uttered. He only wished he could believe himself to be worthy of them. He felt that these Societies were of benefit in bringing members into contact and fostering a kindly professional feeling. Unity is strength, and strength is what is required for the helping on of their profession. He desired again to thank them for their kind expressions, and hoped they would assist him in the future by their presence as they had done in the past. When his term of office was finished he would then have the gratification of knowing that he had made no enemies, but had extended his list of friends.

In the absence of Mr. Sumner, Mr. Faulkner proposed the toast of "The Visitors." He thought it was only necessary on behalf of the Association and its President to extend a very hearty welcome to the visitors. He thought the function would be exceedingly flat without their presence, and he gave them a cordial invitation to come again.

Mr. Renshaw (Bury) responded, at the same time paying a high tribute to the President, and the esteem with which he was held in Bury.

Mr. Merritt submitted the toast of "The Ladies," and Dr. Cryer suitably responded.

The musical side of the entertainment was provided by Messrs. Faulkner, S. Locke, Packman, Butcher, Walmsley, and Holt, and a very enjoyable evening was spent.

INDUSTRIAL ANTHRAX.

By T. M. Legge, M.D., Oxon., D.P.H., Cantab.,
His Majesty's Medical Inspector of Factories.

Abstract of "Milroy" lecture delivered before the Royal College of Physicians of London on March 7th, 9th, and 14th, 1905.

During the six years 1899 to 1904, both inclusive, there have been thus reported at least 261 cases of anthrax contracted in factories or workshops or so intimately connected with such conditions that I have not thought it wise to exclude them. I have commenced with the year 1899 because since then information has been obtained of the great majority of cases which have occurred. Between the years 1896, when the enactment first came into force, and 1898 cases were reported—13 in 1896, 23 in 1897, and 28 in 1898—but there is little doubt that owing to ignorance of the requirements of the section there was failure to notify some cases which occurred. Taking the figures as a whole they can be distributed in four main divisions.

Table I.

Industry.	Males.	Femal's	Total.	Fatal.	Per cent.
Worsted and wool	70	18	88	23	26·1
Horsehair & bristles	53	17	70	17	24·3
Hides and skins	86	—	86	21	24.4
Other industries	15	2	17	6	35·3
	224	37	261	67	25.6

Going more into detail as to industry the bulk of the cases in wool have occurred in the processes of wool-sorting, wool-combing, and spinning carried on as independent industries or as preliminary stages in the manufacture of carpets, blankets, and rugs, and of felt; in horsehair they have occurred principally in hair-combing for stuffing purposes and in brush-making; in the hide and skin industry, while the incidence has been mainly at the docks, in warehouses, and tan-yards, isolated cases have been noted in the making of leather articles. The cases included under other industries are interesting. This heading includes isolated cases among workers of horn and persons employed in rag-sorting, in unloading corn, in carrying sacks of potatoes, in a fruit warehouse, in the railway station, and in the manufacture of chemical manure. The total number of persons employed in wool, worsted, and shoddy in the United Kingdom in the year 1901 is stated to have been 259,909. Of this large number, however, only 1171 are classed as being engaged in sorting, and 3093 in combing, the dangerous kinds of wool under the special rules for wool-sorting and wool-combing (Van mohair, mohair, Alpaca, pelitan, Cashmere, Persian and camel hair), making a total of 4264 persons incurring special risk. At least 64 of the cases occurred among persons employed in the sorting and combing processes of the scheduled dangerous classes of wool. I have excluded from this number cases of outside infection conveyed to others by workers manipulating these wools and cases among spinners and weavers, even when these occurred in factories where dangerous wools were manipulated and were possibly the result of infection from insufficient separation of one process from another. On the number (4264), therefore, exposed to risk, taking these 64 cases, the figure of attack is 1·3 per cent. or 0·21 per cent. per annum. In horsehair factories, in all processes, the total number employed in the year 1901 was 2206. The number of cases of anthrax in horsehair factories was at least 40. I have excluded from this figure altogether the cases which occurred from the use of horsehair and bristles in brush factories. Estimated in the same way as for wool, the figure of risk in the horsehair industry is 1·8 per cent., or 0·3 per cent. per annum. The risk in horsehair factories generally, therefore, stated in this way shows itself to be greater than in wool, when the figures dealt with are limited to those manipulating the scheduled dangerous classes. For particular factories, both of wool and horsehair, a very much higher attack rate could be given.

In the whole of Scotland among 29,256 persons employed in wool three cases of anthrax were reported in the corresponding six years (two in Ayr and one in Lanark); among 794 employed in horsehair nine cases (all in Glasgow) were reported. No cases were reported among the 15,563 persons employed in leather. One case from manipulation of hides occurred in Swansea.

Incidence of anthrax on persons employed in wool is centred almost entirely round the Bradford district of the West Riding and in Worcestershire. No case at all has occurred in the woollen factories of the Stroud Valley in Gloucestershire, Wiltshire, Somerset, and Devon, representing a population of 7000; and again in the whole of Scotland, where nearly 30,000 are employed, only three cases have been reported. This is explained by the fact that, except in the two counties named, the nature of the manufacture does not involve the use of dangerous classes of wool in the raw state from Asia Minor and Persia to be described presently. In the cloth factories of the Stroud Valley and in Scotland colonial wool chiefly is manipulated. Distribution of the cases from manipulation of horsehair follows much more closely the population so engaged, which suggests that the dangerous classes of hair from China, Russia, and Siberia are more generally used. Discrepancies in incidence of anthrax and number of persons employed in leather are to be observed similar to those noted in wool. The counties of Northampton, Somerset, Devon, Surrey, Stafford, Cheshire, West Riding of Yorkshire, and Lanarkshire show practically no cases, although the number of persons employed is fairly large. Anthrax in this industry is mainly confined to the ports of London and Liverpool.

According to the occupation so in a measure does the situation of the pustule vary. In the hide and skin industry the pustule was situated on the neck in 49·4 per cent. of the cases as compared with 29·5 per cent. in wool—a difference to be accounted for perhaps by carrying of the hides on the shoulder. The arm, as might be expected, is much more frequently selected as the site of the lesion when the disease is contracted from work connected with the disposal of a carcase, although even then, apparently, it is less frequent than on the face.

The accident of situation is of considerable moment in determining the severity of the disease. Thus in the cases under review of 13 on the upper eyelid six were fatal=46 per cent.; of 103 on the neck, 31=30 per cent.; of 19 on the forehead, 2=10·5 per cent.; and of 31 on the upper extremity (including the shoulder), 41=2·9 per cent. Inability often to venture on an operation, absence frequeutly of the diagnostic sign of local necrosis, and the looseness of the cellular tissue account for the high fatality where the upper eyelid or the eyebrow is affected. And even in recovery from the local lesion in this situation extensive sloughing of the eyelid often results. Other figures, based on 180 observations, give the mortality on the head and the face as 26·3 per cent. on the trunk as 22·7, on the neck as 18·5, on the upper extremity as 13·8, on the lower extremity as 5·1.

The figures which I have given for this country exclude the cases which have occurred to the numerous class of persons who come into contact with animals infected with anthrax during life or have taken part in their slaughter and disposal of the carcase. Unfortu-

nately, in no country can more than a guess be made of the number thus engaged who suffer.

In 1901 deaths not due to factory conditions were those of a butcher and a fireman in the merchant service; in 1902, of two farmers, a shepherd, and an auctioneer and valuer (the latter had assisted in dressing a dead carcase); and in 1903 of a grocer's assistant, a farm labourer (contracted from bone manure), a butcher, and a gamekeeper. The figures show a marked increase in the decade 1894-1903 (140 deaths) as compared with the previous one (90 cases).

With the exception of this country, in all other countries of the world probably anthrax in the human subject is derived much more from contact with the carcase of a dead animal than from the spores contained in the wool, horsehair, hides, and skins of animals imported from distant countries. It is important therefore to ascertain as nearly as can be done the country of origin of the material which conveys anthrax to the factory workers in Great Britain. The source of the suspected material so far as it can be shown is brought out in Table VI.

TABLE VI.

Wool.		Horsehair.		Hides.	
Persian(Bagdad)	29	China	22	China	19
Persian or camel hair	7	Russia, Siberia or China	13	China or East Indian, etc.	5
Persian or alpaca	1	Siberia or Russia	5	Madagascar, E. India, or China	1
Mohair or Persian	1	South America or Siberia or Russia	13	Bombay, East Indian	20
Mohair	13	All kinds except Chinese	5	East Indian or Russian green hides	1
Van mohair	8	Indefinite	12	Cawnpore goat skins	1
Mohair or cashmere or camel hair	2	Total	70	Cape or Singapore	1
Cape mohair or Turkey mohair	3			Cape	3
Mohair or alpaca	1			Australian	1
Pelitan or mohair	1			South American or New Zealand	1
East Indian	8			Arabian	1
Native, Colonial, or E. Indian	2			Morocco	1
Camel hair	3			West African	2
Finished tops	1			Buffalo hides	1
Probably Persian or E. Indian	2			Madras and Bombay tanned hides	1
Indefinite	6			Tanned sheep skins	2
Total	88			Tanned boot leather	1
				Native	1
				Columbia	1
				Persian goat skins	3
				Indefinite	19
				Total	86

In the case of wool a small fraction of the total quantity imported has conveyed all the infection. No single case has with certainty been traced in the six years to wool from Australia and New Zealand, which in the year 1902 amouted to 417,442,529 pounds, valned at £13,537,457. On the other hand at least 30 cases with certainty, and possibly 40, have occurred from use of Persian wool valued in 1902 at £13,159. At least 21 cases, again, have occurred from use of mohair and Van mohair imported from European and Asiatic Turkey, the value of which in the same year was £746,818. In horse hair at least 22 cases are traceable to material from China, valued in the year in question at £40,758, or, if bristles be added, at £188,650, and several cases also to Russian or Siberian material valued at £266,497. In hides and skins imported in the wet condition (mainly from Italy and South America through the ports of Germany, France, Holland, and Belgium) only two cases could with any certainty be traced, although such material in 1902 was valued at £1,595,109. In dry hides, on the other hand, 19 cases were due to manipulation of material from China valued in 1902 at £87,989, and a similar number from Bombay and East Indian raw dry hides valued at £265,422.

Having thus shown the part played by the introduction of raw foreign material in the production of anthrax in man I turn to the information available which will throw light on the occurrence of anthrax in animals in these countries, especially in Asia, and on the conditions which favour its spread. These will be found, I think, in conditions of soil, of climate, and equally also in the primitive nomadic life of many of the inhabitants which takes no thought of rational preventive measures. Anthrax in animals is common in all parts of the world. Official figures, taken from Jahresberichte über die Verbreitung von Thierseuchen, except those for Great Britain, showing the gross number attacked in such countries as make returns are set down in Table VII. for the years 1901 to 1903.

TABLE VII.

Country.	Cases of anthrax in anim'l's		
	1903	1902	1901
Great Britain	1143	1032	971
England	792	706	674
Scotland	324	307	281
Wales	27	19	16
Germany	4626	4852	5843
Netherlands	409	356	261
Belgium	512	512	541
Norway	595	537	467
Denmark	15	155	69
Switzerland	237	300	210
Italy	3959	6099	2604
Roumania	452	104	192
Bosnia and Herzegovina ...	241	166	273
European Russia & the Caucasus	47,300	42,423	54,731
Asiatic Russia	4200	6802	6886

In France, Hungary, and Sweden the returns are made, not of the number of animals attacked, but of the number of infected farms, and of those in France there were in the three years 416, 395, and 491 respectively; in Hungary 1974. 2158, and 2754; and in Sweden 224, 218, and 179. From one other country in Asia statistics of the prevalence of cattle diseases are given—namely, in India. The numbers of animals that died from anthrax in the North-West Provinces and Oude, North and South Punjab, the Bombay Presidency, Bengal, Burma, Sind, Rajputana, Madras, and Berar are stated (Annual report of C.V.D. in India) to be as follows :—

TABLE VIII.

	1899.	1900	1901	1902	1903
All diseases	343,906	304,931	249,691	228,606	258,419
Anthrax	33,667	36,070	25,997	28,081	30,715

Although these figures may be, and probably are, inaccurate the statement remains in the report that rinderpest and anthrax are the "two most prevalent fatal diseases of Indian cattle." There is an inclination always to doubt the accuracy of statistics on anthrax inasmuch as all sudden deaths of animals which cannot be otherwise accounted for are often ascribed to it. Still, the figures which have been given are separated from the other recognised animal diseases such as

DISEASES OF ANIMALS ACTS 1894 TO 1903. SUMMARY OF RETURNS.

Period.		Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies. Cases Confirmed.		Sheep Scab.	Swine Fever.	
		Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Dogs.	Other	Out-breaks	Out-breaks.	Slaughtered *
GT. BRITAIN. Week ended Mar. 25		24	35	..	..	24	68	..	..	30	14	219
Corresponding week in	1904 ..	23	33	..	..	42	65	..	..	35	19	91
	1903 ..	18	27	..	..	25	36	..	..	25	37	198
	1902 ..	12	22	..	..	34	56	1	..	53	27	91
Total for 12 weeks, 1905		251	383	..	..	267	522	..	..	534	139	694
Corresponding period in	1904 ..	251	348	..	..	347	679	..	..	912	299	1789
	1903 ..	188	300	..	..	276	502	..	..	978	318	1459
	1902 ..	187	340	..	..	266	509	7	..	915	375	2000
IRELAND. Week ended Mar. 18		1	1	..	..	2	5	..	..	8	..	..
Corresponding Week in	1904 ..	..	..	..	..	..	..	..	..	15	1	76
	1903 ..	..	..	..	..	..	..	..	..	22	..	38
	1902 ..	..	..	..	..	..	1	..	..	11	3	75
Total for 11 weeks, 1905		..	..	..	..	8	17	..	..	174	5	196
Corresponding period in	1904 ..	1	1	..	..	2	9	..	..	275	24	631
	1903 ..	..	..	..	..	1	2	..	..	309	8	371
	1902 ..	..	..	..	..	3	8	..	..	327	33	528

Board of Agriculture and Fisheries, Mar. 28, 1905.

Epizootic Lymphangitis, Week ending Jan. 14, 2 cases; Feb. 25, 2 cases.

Department of Agriculture and Technical Instruction for Ireland, (Castle Street), Dublin, Mar. 23, 1905.

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection.

rinderpest, cattle plague, foot-and-mouth disease, etc. Table IX. shows the actual incidence of the disease per 10,000 of each class of animal. I can only give the figures for Germany and Great Britain.

TABLE IX.

Country.	Yr.	Horses.	Cattle	Sheep	Goats.	Swine
Germany	1903	0·36	2.11	0.35	0·03	0·08
Gt. Britain	1903	Not stated.	1·2	0·02	Not stated.	0·8

Although this is the average for the whole of the countries named, incidence in particular districts is far greater. Thus among cattle in the district of Düsseldorf it was 11·15 per 10,000, in Zwickau in Saxony 8·8, in Chemnitz (also in Saxony) 8·5, and in Anhalt 6·6. In this country in 1903 in Haddington it was 15·4 per 10,000 and in Aberdeenshire 4·9. Interest to us centres round the large figures obtained from Russia. In the 59 districts in European Russian from which returns were received in the month of August, 1904, cases of anthrax were only absent from three of them and in the 13 districts of Asiatic Russia they were absent from four. The importance of the figures in establishing the law which I believe underlies the whole question of the incidence of anthrax among animals in Asia and in man in this country is brought out by distributing the cases month by month over a period of years as has been done in the following curve.

Until March of each year there is practically no change in the incidence; there is then an enormous development of the disease, reaching its maximum in July and August, followed by a rapid fall in September and October; in November and December the same figure as that for the early months of the year is reached. This same curve of seasonal influence is apparent, though less marked, in the figures showing incidence of anthrax in Germany since 1885. In contrast to this figures taken quarterly in Great Britain show least incidence of anthrax in the third quarter, July, August, and September. Thus, of a total of 4250 outbreaks in the six years 1899-1904 there occurred in the first quarter 1114, in the seoond 1166, in the third 850, and in the fourth 1120. As is to be expected in countries where incidence of anthrax is greatest in the hot summer months and where industrial conditions are not predominant, incidence on man is subject to the same law and is dependent on direct transmission from animals to man. Thus in Italy of 11,102 cases of malignant pustule reported in Italy in the five years 1892-96 there occurred in the first quarter of the year 1482 cases, in the second 1398, in the third 5286, and in the fourth 2936.

It is interesting to see whether in this country there is any corresponding fluctuation of the disease in man such as occurs in animals in Asia (for what holds good of seasonal influence in European and Asiatic Russia may be assumed to be the same in all countries in Asia exposed to like high summer temperatures). Any close relation between the two must be interfered with, firstly, because factory work at home is continuous all the year round, and secondly, material is stored for varying periods both in Asia and in this country and such as is collected in the summer months in Asia will not necessarily be handled at a corresponding later date here in the factory. The fact that the average number of cases in each of the four months—July to October—is 15·1 and for each of the eight other months is 25·7 points slightly to reflection of the lessened incidence among animals in the winter months in Asia.

The simplest explanation of the facts stated is seasonal variation in temperature and all that this means in changes in the soil and vegetation. We know of the anthrax bacillus that its greatest development takes place at a temperature of 35° C., that multiplication is arrested below 12° C. and above 45° C., and that cooling below the freezing point does not kill it. Spores are most readily produced at a temperature of 32° C. Below 18° C. and above 42° C. the capacity for sporulation ceases. In studying the possible saprophytic growth of the bacillus Koch found that excellent media for its growth could be obtained from emulsions of seeds rich in starch, such as barley, wheat, peas, and grass, and from the fresh juice of potatoes, turnips, etc. Living plant cells do not form a suitable soil, but water in which hay and straw have been allowed to decay, if neutralised or made slightly alkaline, became a suitable medium. Possibly the presence of chalk in the soil by neutralising the acids produced in decay may help to render suitable soils otherwise unfitted for the bacillus to develop in. —*The Lancet.*

(To be concluded.)

BANQUET IN HONOUR OF PROFESSOR JAMES LAW.

The second annual banquet of the Society of Comparative Medicine in honour of the 10th anniversary of the founding of the New York State Veterinary College at which a special ovation was given Professor James Law, was held in the dining parlours of the New Ithaca Hotel on the evening of February 15th. About 125 students and guests were present.

The tables were prettily decorated with palms and candelabra. All joined in signing "Alma Mater," after which an elaborate banquet was served.

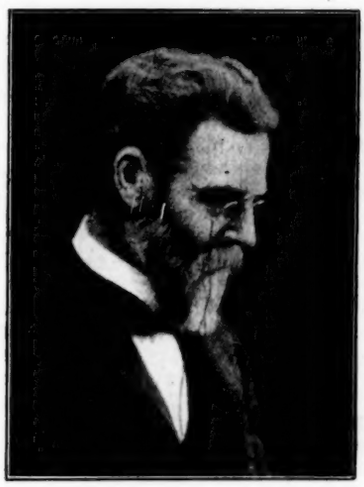
At the conclusion of the feast F. R. Smith, '05, gave a speech of welcome, and said in part: "Gentlemen, we are here this evening for the second annual banquet of this Society, at the same time to celebrate the tenth anniversary of the founding of our College, and furthermore to express our love and esteem and to do honour to our 'Grand Old Man,' Dr. Law. To the distinguished friends who are with us to-night and to the alumni of the College who are present on behalf of the Society of Comparative Medicine, I bid you welcome." He then introduced Dr. Fish as master of ceremonies.

Dr. Fish, with a few well-chosen remarks, called on President Schurman to respond to the toast of "The University." President Schurman said that it was not often that he accepted invitations to banquets, refusing more than he accepted, but on this occasion he could not refuse to be present when such a great man as Dr. Law was to be given an ovation. He spoke at some length on how Andrew D. White discovered that such a man as Dr. Law existed. He said that the students of the veterinary college might well be proud of their director, who was a man who has raised the standard of veterinary science to its present level and who has done more for that science than any other living man. He also spoke of the growth of the College which in the year of its inauguration had 11 students enrolled, and to-day had 108, an increase of tenfold in 10 years.

The Hon. Andrew D. White was next called on to respond to "Dr. Law in his Relation to Cornell University, New York State, and the United States." He spoke of his early relations with Dr. Law. He said that no other university professor would ever be able to produce such a man as Dr. Law. He said that he had produced Law, and that President Schurman had produced the College. He told of Dr. Law's duties when he came to this College 40 years ago, and of how hard he worked in the one little room of the only building on the campus at that time, and of what he had done for veterinary science from that time to the present day.

Dr. V. A. Moore responded to the toast of "Dr. Law as a Scientific and Professional Man." He spoke of his early experiences at the College in 1893 when he came here as a freshman, and of the zeal with which the students used to gather in the old lecture room to listen to lectures given by Dr. Law. He told of how a fellow student told him the story about Ezra Cornell sending A. D. White to England to get a horse doctor. He said at time Ezra Cornell wanted and Andrew White did.

The next speaker was Dr. David S. White, Dean of the Ohio State Veterinary College, who responded to the toast, "Dean Law Through the Eyes of Dean White." Speaking of Dr. Law he said in part: "His name and fame are known throughout the land and sea. As we gather here to-night to do him honour and witness his students extend to him a token of their love and esteem in the material form of a loving cup. I am tempted to draw from his life a lesson which will ever be to us an inspiration, that it is to be ever noble and to work. And now, Professor Law, I ask you in behalf of the faculty and students of the College of Veterinary Medicine of the Ohio State University to accept our consecrated wish that you will ever be liberally endowed with life's greatest blessing of health and prosperity.



JAMES LAW, F.R.C.V.S., D.V.S.,
Professor, Cornell University, Ithaca, U.S.A.

In presenting the loving cup, Dr. D. H. Udall, in behalf of the faculty and students, paid a high tribute to Dr. Law, and said in part: "As pupils we recognise in him those qualities which inspire one with an ambition for scientific proficiency and for the cultivation of those elements which furnish the material for character. We recognise and are impressed by the spirit of personal sympathy and interest in our welfare that forebears our faults in recog ition of the best that is in us. These traits have stamped their influence and left their imprint on the minds of every student that ever became his pupil. In moulding the professional destiny he has unconsciously, by the force of his personal example, exerted a powerful influence in the development of those faculties which we respect and admire in our fellow creatures. The students and alumni of this institution are brought together to-night by the spirit of loyalty it has inspired in them. We take unspeakable pleasure in paying our respects to that personality. Its light can never depart from the campus of Cornell University. May its bearer live long in the enjoyment of those gifts he has so skillfully used, and may this token of our esteem and gratitude convey to him

thoughts that he had so many times expressed to us in deeds."

Dr. Law in response said that he did not know that a cup was to be presented him until he came to the table, and if he were a younger man his emotion would be so great that to make a speech would be impossible. He said that one of his greatest pleasures would be to look upon the loving cup. He talked of his early experiences in this city and said that when he came to the United States he came here to stay, to make it his home and to do his work. He said that his work had not been that of a genius but of hard labour. His best advice to students was not to jump at conclusions, but to do their work faithfully.

The cup presented Dr. Law, a magnificent specimen of the jeweller's art, was made by Tiffany of New York. —*American Veterinary Review.*

PROSECUTION FOR SHEEP SCAB.

At the Whitehaven Police, on Thursday, March 21st, John Batey, 34, farmer, Calderbridge, was charged with failing to report with all practical speed sheep scab on his farm, Thornholm, in the parish of St. Bridget's, between March 2nd and 10th, 1905.

Mr. Chapman appeared for the defendant, and Mr. C. W. A. Hodgson, Carlisle, prosecuted, on behalf of the Contagious Diseases Animals Committee of the County Council.

Thos. Hunter, farmer's son, of Croft Brow, who acts as shepherd for his father, stated that his father's sheep and the defendant's interminged on the fell, there being no fence to separate them. On the date in question he noticed two of the defendant's sheep suffering from scab. His four sheep were clear. Witness took the six sheep home and reported the matter to the police on the same day. The two sheep had defendant's mark on them. As soon as he got them to Croft Brow he dressed and dipped them three times. The sheep were now recovering. Witness had had a lot of experience in scab, and he was quite sure the sheep mentioned were suffering from the disease. They were very badly affected, and he should say they had been scabbed five or six weeks ago.

By Mr. Chapman: He managed the farm for his father. He was 27 years of age.

Mr. Chapman: You were fined here on two occasions? —Yes.

Continuing, witness said he felt it was his duty to report a neighbour's sheep. There was no love lost between him and Batey. He knew scab when he saw it as it was an insect, and he could tell it by putting his finger on the sheep.

In reply to Mr. Chapman, he did not use a microscope.

Wm. Litt, veterinary surgeon, said he visited Hunter's farm on the 5th and 6th, and whilst there examined two sheep, and found them both scabbed. On the 8th March he went to Thornholm, and examined some sheep there, one of which he found was affected. He thought that it would have been bad a fortnight, and the sheep had every appearance of having been dipped. In one lot of sheep he found two affected and five recovering.

Mr. Chapman objected to evidence being given in regard to wool being sent for examination, which they had not had any notice or opportunity given to his client. It was obviously unfair in his opinion.

The Clerk: The Board of Agriculture lay down this as the proper course of testing the wool.

The Chairman: I agree with the Clerk that there is nothing in your objection.

Mr. Chapman asked for the Clerk to take a note of his objection, and this was done.

In reply to Mr. Hodgson, witness said the defendant had an opportunity of getting a sample of wool himself.

Cross-examined: He used the lens in every case.

The Chairman: Can you give us any idea as to how long they were affected?—Some of them perhaps a month.

Mr. Chapman handed the witness several negatives, and asked him to examine them and see if he could find any signs of scab on the sheep.

Witness said he did not recognise the parasite in any of the six exhibits. There were some of the representations like the parasite, but he could not swear to them.

By Mr. Chapman: He did not call the defendant's attention to the fact that they were going to send what they had taken to the analyst.

After a consultation the Clerk said the Board of Agriculture laid down this as the proper course of testing wool.

By Mr. Watson: The samples were put in boxes They were not sealed.

In reply to further questions, witness said sheep had a constant secretion, which was constantly going on, and this matted the wool, which was always a bit greasy.

Mr. Chapman: Doesn't this produce an effect which to the inexperienced might be taken for scab?—Yes. An inexperienced man might make a mistake.

John Bell, Chief Inspector to the Local Authority for the county, and Inspector for the Board of Agriculture and Trade, said that he went to Thornholm on Wednesday, and saw ten sheep. He made a very careful examination, and found that the sheep were recovering from scab. They practically had recovered, and he asked Mr. Batey if they had been dipped, and he said they had been seven times. He believed they had been dipped since the police were there, but was not prepared to swear that. The scab parasite had been destroyed by the repeated use of the dip. In his opinion they were sheep which had been affected with scab, and were recovering. He also went to Croft Brow where his attention was drawn to sheep—a ewe and a wether. In his opinion they were suffering from scab, and had not as far recovered as those at Thornholm. Their skins showed signs of scab, and had been dipped and salved with blue ointment. He took a portion of wool at both places, and carefully examined it at Carlisle, and failed to find any signs of living scab upon them. Two samples were then produced from the affected sheep.

By Mr. Chapman: It was only his opinion, and there was room for difference of opinion.

Mr. Chapman: Thank you for that.

After several more questions had been answered Mr. Chapman asked how long ago it was since scab existed!

Witness: I fixed the date from the time of the present dressing as a very important element in this case.

Further he stated that he saw no traces of scab from either of those specimens he examined.

Mr. Chapman: Could it have existed a fortnight ago? —Yes, sir.

Witness continued: When anyone dressed sheep seven times it looked to him that in doing so it was to get rid of something. From either of the specimens he was of opinion that the scab had existed a fortnight ago. The most certain proof in these cases was the production of the parasite. He would have expected to have found traces of shrunken parasites, but he failed to discover either living or dead parasites.

The Chairman: Can you conceive of any condition in certain cases of scab which would cause a farmer to dip his sheep seven times in so short a period?—No, sir.

Supt. Hope said that he visited Thorne Holme with Mr. Litt on the 8th of this month. He went for the purpose of inspecting Mr. Batey's sheep. On the way there he was informed that Mr. Batey had reported to the police that he had two sheep affected with scab. Their intention was to have gone on the fell, but on arriving at the fell they proceeded down to Thorne Holme. They were accompanied by Inspector Stephen, of Cleator Moor, P.C. Wren, of Ennerdale Bridge, and Thomas Hunter of Croft Brow. On getting to the place

Mr. Litt examined the sheep. After he had examined the sheep defendant, in reply to witness, said that the sheep that had been examined by Mr. Litt were sheep that were brought from the fell yesterday. The sheep were in the yard. While Mr. Litt was making his examination witness looked round Mr. Batey's dipping pens. The pens opened out in the yard in question where the sheep were. In a hole in one of the pens he discovered a quantity of wool. He pulled this wool out and, on examining the first piece, which would be eight inches by the very least four inches, he found the wool covered with fresh scab. The wool was damp and smelled of fresh dipping. He showed the wool and scab to Mr. Litt, and asked his opinion of it, and after hearing what he had to say about it, he called Mr. Batey's attention to it, and also stated that Mr. Litt had informed him that the wool had come off a scabbed sheep, and he also pointed out where he had taken the wool from. In reply defendant said "It has been there for a long time." In addition to that piece of wool there were two other pieces of wool, which had also an incrustation of some kind, but it really appeared to be old. After Mr. Batey had told him that the wool had been there for a long time he said to defendant, "Do you desire, Mr. Batey, anyone else to see this wool for you as I will have to destroy it?" Defendant said "I have no one." Witness suggested to him that he might ask his shepherd to have a look at it, but he declined. Witness then carried the whole of the wool and placed it in the fire in Mr. Batey's house. A little later, after certain communications had been made to him, he charged the defendant with failing to report the existence of sheep scab on his premises. Defendant said "Of course I didn't." Defendant added, "There are three sheep here I would like you to see if you will go and see them. Two sheep are a lot worse now than they were a week ago when examined by Sergt. Batey." Defendant explained that the wool of the sheep had been pulled out since they were examined by Sergt. Batey. Defendant also said, "These sheep have been 'wicked.'" He also said one of the sheep had been 'wicked' for over a year.

Cross-examined by Mr. Chapman: He was speaking as a practical witness. He had no doubt whatever as regards his opinion.

Mr. Chapman: Then you go further than Mr. Bell.—Mr. Bell can only speak as regards his own opinion. The scab on the wool found on the wall had not dried hard and white. I know that it does dry white.

Mr. Chapman: I say it dries a browny black.

Witness contended that the scab dried white.

Witness said he did not wish to convey to the Bench that the wool was concealed—it was there for anyone to see. The wool was near to the dipping tank.

Mr. Chapman: And quite handy for anyone to wipe their hands on. (Laughter)

Witness said he did not know whether it was a piece of that wool that Mr. Litt had sent away to Professor Williams.

A report made by P.-C. Morrison was here put in. The report was dated 28th February, and stated that four of the sheep showed signs of being stricken with maggots, and that one Herdwick hogg was suspicious.

Inspector Stephen and P.-C. Morrison gave evidence, the later stating that Mr. Batey reported seeep scab to him at seven p.m. on Tuesday, the 7th of the present month. He reported two sheep. He was with Sergt. Batey when he examined the sheep on February 28th.

This was the case for the prosecution.

Mr. Chapman contended that if there was scab it was surrounded by such an amount of doubt that the Bench should give the defendant the benefit of the doubt. Mr. Chapman called

Professor William Owen Williams, who stated that he was veterinary surgeon to His Majesty the King, Professor in Veterinary Medicine and Surgery of the University of Liverpool, ex-president of the Royal College of Veterinary Surgeons, etc. He yesterday visited, at Thorne Holme, the ten sheep which had been the subject of this case. He carefully examined each one of the sheep. He examined each of the sheep separately to see if they were affected with scab. He found that these sheep had been examined on several occasions and the wool had been removed from the top of their backs. He also found that these sheep had a large quantity of "yolk," which really is the natural grease from the animal to waterproof the wool. This "yolk" in large quantity has the appearance of scab, but it is the natural product and not the product of the irritation of parasites of any description. There were scabs formed due to two parasites—one is an extremely minute parasite, and this is scab that comes under the Contagious Diseases (Animals) Act. The other scab was formed by maggots. He took samples of what an inexperienced person might have thought was scab, and last night made a most careful examination under the microscope and he could find neither dead nor living parasites nor portions of dead parasites. He was firmly of the belief that there was no scab parasites on the sheep for a very long time.

Mr. Chapman: Suppose they had had scab two months ago, would you expect to have found it?

Witness: If they had had scab two months ago and been dipped in the ordinary way two months ago, if there had been any of the actual scab left it would have contained some of the dead bodies of the parasites. He had no doubt if a portion of the parasites were put into a box they would be found to be alive after a lapse of ten years. They would be mummified.

Mr. Chapman: For an unprofessional person it is a reasonable thing to say that there was scab?

Witness: Some men have swollen heads. (Laughter.) He thought it was a ridiculous thing for a man to come forward and swear that an animal had got scab—they could not have scab without the parasites.

Cross-examined by Mr. Hodgson: He had been a practitioner for 25 years. He received a sample of wool from Mr. Litt, but the latter did not say where the wool was from, and he sent him a report. In the report it was stated that there was scab parasites on the wool.

Re-examined by Mr. Chapman: Mr. Litt asked him if the wool was extremely old and that it might have been taken from a sheep two or three months ago. There was no mark to identify the wool.

Mr. Chapman: What colour does scab dry?—A dark brown, until it breaks up.

Mr. Chapman: Is the Supt. wrong when he says it dries white?—He might be colour blind. (Laughter.)

Robert C. Robinson, M.R.C.V.S., and Veterinary Surgeon to the Carlisle Council, said he had examined the sheep with an electric torch and a microscope. He had also scraped the sheeps backs, and had failed to find either dead or living parasites or the débris of dead ones. There might have been scab, but not within three or four months.

Cross-examined by Mr. Hodgson: He did not agree with Mr. Bell's evidence in its entirety.

Was it possible that the sheep could have scab between the 2nd and the 10th March?—No, sir.

The Chairman: What was the reason the sheep were dressed with blue ointment?—There was no doubt the sheep had been affected in the past.

Defendant was next called, and stated that he reported two sheep to the police on the 7th March as he thought they looked suspicious and he wanted to make himself safe. He had been on the farm about twelve months. It was soon after he went to the farm that his neighbour was fined for scab. He dipped the sheep oftener than usual owing to his being near an affected flock, doing this as a precautionary measure,

John Benn, farm servant with the defendant, said he had dipped some of the sheep for the defendant. There

was some wool in a hole in the wall, which was about six feet from the dip tub. He wiped his hands on this wool before he went to lunch, having done this on many occasions.

Cross-examined by Mr. Hodgson: This wool was of rather a brownish colour and it appeared to be old wool. He could not say that there was any scab on it of any kind.

By Mr. Chapman: It was the same piece of wool that the Supt. took out of the hole.

James Stafford, V.S., also gave evidence as to examining the sheep, and stated that he could not find any trace of scab parasites. In his opinion none of the sheep could have been affected with scab between the 2nd and 10th March. Two of the sheep were dressed with blue ointment and this would have preserved the parasites.

Henry Walker, Sellafield, stated that the sheep could not have been affected with scab since the time they were sworn. Had they been there would have been black specks on the skin. They dipped their sheep five times a year.

James Moore, shepherd for Mr. Isaac Fletcher, High House, also expressed the opinion that the sheep were not affected with scab.

Thomas Newby, farmer, Priorscale, said he was certain that not since clipping time had any of the sheep been affected with scab.

The Bench retired, and on their return the Chairman (Mr. Fox) said: We are all agreed to convict in this case, and we fine the defendant £5, including costs. Farmers, added the Chairman, must overcome their reluctance to reporting sheep scab.—*Whitehaven Free Press.*

Personal.

There was a very pleasant gathering on Wednesday night, 20th Feb., at the Grand Hotel, when the veterinary staff of the Agricultural Department entertained their colleague, Mr. W. H. Chase, M.R.C.V.S., at a complimentary dinner, on the occasion of his transfer to the service of the Government of the Bechuanaland Protectorate. Great regret is felt at the loss to the Department of so popular and efficient an officer, and the Government of the Protectorate may be congratulated on his acquisition. Mr. Chase has for the past twelve months been in charge of the Molteno district.—*Cape Times.*

At the Old Berkshire Hunt Point to Point races held in the Barcote Vale on March 23, "Red Eagle" the property of J. H. Parker, M.R.C.V.S., ran 2nd in the 13st-7 race, and would probably have won had he not refused the second fence. There were 12 starters.

OBITUARY.

ROBERT WARD, F.R.C.V.S., Baltimore, Maryland, U.S.A.
Graduated, Lond: Dec., 1865.

Dr. Robert Ward died at Baltimore, on Friday, March 24th, in his 70th year. He was son of the late Mr. Robert Ward, of Grosvenor Road, London, S.W.

CORRESPONDENCE.

THE POSSIBILITIES OF HYBRIDISING.

Sir,

Another contribution by Capt. Martin on the subject of hybridising is very interesting, and would lead us to conclude that these cases are not so rare as previously supposed. Unfortunately, like myself, Capt. Martin cannot personally verify his statements. However, since perusing his (the Captain's) logical comments, I have again interviewed my informant who assures me that his friend in Cairo can vouch for the genuineness of the case. I may say that my name is not John as previously reported, but—

yours sincerely,
JAMES FORBES.

Truro, March 26th.

Sir,

In *The Record* of the 11th I note the case of hybrids by Mr. Forbes, of Truro. I think the photos very good, but the *mule* looks very like our Cyprus jack donkey. Now this island is not only noted for its wines but for its mules and donkeys, which are all exported to Egypt and are in greater request than the Syrian mule. Our stud donkeys are as big as mules. I do not wish to controvert what has been printed, but should like Mr. Littlewood's, V.S., of Cairo, opinion on the matter. I think my friend Mr. Mule is positively closing one eye in the top left hand picture and I see his image every day. I have shown the photo with under print covered to men here, and asked what it was. Unanimous reply, DONKEY. There is a Cypriote proverb here "When the bishop's mule breeds a man may have children."—Yours truly,

GEO. J. HARVEY, V.S.

Larnaca, Cyprus.

ROYAL VETERINARY COLLEGE OF IRELAND.

Sir,

In connection with a paragraph in your last issue on the Royal Veterinary College of Ireland I desire to point out that there is a larger number of students on the books and in attendance here this session (without counting amateur students) than the number claimed by Sir Christopher Nixon for the Royal Veterinary College of Ireland. There seems, therefore, to be a mistake in claiming that it has the second largest number of students of any veterinary College in the United Kingdom.—Yours truly,

J. R. U. DEWAR, Principal.

Royal (Dick) Veterinary College,
Edinburgh, March 28th.

MOIST ECZEMA OF THE DOG.

Dear Sir,

Having had a few cases of this disease to treat during a number of years, I think it would not be out of place to record my experience of treatment.

It appears to me that the great principle of any treatment is to allay irritation; if this is done then the disease disappears of its own accord. I never use ear caps or Elizabethan frills or any other method of restraint, as experience taught me they were useless and worried the animal, or my clients did not like their poor animals tortured.

No clipping or shaving or washing is necessary. My formula is as follows:

Finely sifted *pure* zinc oxide	1 ounce.
Beechwood creosote	2 drachms.
Pure lard	to 8 ounces.

Melt the lard, add the zinc, and stir well, and when cooling add the creosote. This is applied every day, if necessary, to the affected parts.

For the acute or moist eczema of the internal auditory meatus the daily insufflation of *finely sifted* zinc oxide is sufficient.

The trouble I find is with recurrent eczema, especially in some breeds such as the Aberdeen terrier. For chronic eczema the old fashioned oil of tar, sulphur, and linseed oil takes a lot of beating. This mixture may not be so pleasing to one's mind as some of the newer, more fashionable, and at the same time more expensive agents, still it is as if not more effectual than they.

The old practice (which is still adopted in some places) of tying a piece of cord round the tyke's neck and lowering him into the lime water pit at the tannery is very successful even if it doesn't appear scientific.

CYNOPHILIST.

Several communications are unavoidably held over.